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STATE-WIDE CEREAL VARIETY TESTING PROGRAM TRIALS IN THE COLUMBIA BASIN

Russ Karow, Pam Zwer, Helle Ruddenklau and Mike Moore

INTRODUCTION

This article reports results from cereal variety trials conducted across the Columbia Basin in 1994. These trials were conducted as part of the state-wide cereal variety testing program initiated in 1992 to provide growers with local data on cereal variety performance. This program is coordinated by Russ Karow, OSU Extension Cereals Specialist, and Helle Ruddenklau, Research Assistant, Department of Crop and Soil Science. Seed is packaged in Corvallis and distributed to trial coordinators across the state. Coordinators plant, manage and harvest trials, in some instances in cooperation with growers. Information on trial locations, coordinators, and grower cooperators is given in Table 1. Russ Karow's research team processes harvested grain, analyzes results, and provides summary data to extension agents, seed dealers, field representatives, and growers across the state.

Winter and spring barleys, triticales and wheats of several market classes were tested at the 11 sites in the testing network (Table 1). Height, lodging, grain yield, and test weight were determined for all varieties. Heading date, disease reactions, protein content, and other quality factors were determined as time, labor, and equipment allowed.

MATERIALS AND METHODS

Dryland plots (5 x 17 feet) at Heppner, Pendleton, and Moro were seeded at 20 seeds per square foot. Irrigated plots at LaGrande (5 x 17 feet) and Hermiston (5 x 20 feet) were seeded at 30 seeds per square foot. Seeding rate for dryland plots ranged from 64 to 108 pounds per acre, depending on variety, in order to attain the desired 20 seeds per square foot seeding rate. All trials were laid out as randomized complete block designs with three replications. Plots were seeded using small plot drills. Seeding, harvest, and production practices were typical for each location. Harvested grain was cleaned with a Pelz rub-bar cleaner. Plot yield, test weight, protein, and moisture were all determined on cleaned grain samples. Winter and spring wheat and triticale yields are reported on a 10 percent moisture basis and in 60 pound bushels. Wheat and triticale proteins are reported on a 12 percent moisture basis and were determined using a Tecator Infratec 1225 Whole Grain Analyzer purchased for OSU by the Oregon Wheat Commission. Barley protein and moistures have yet to be determined as functional barley software for the whole-grain analyzer is not yet available. Barley yields are reported on an as-is moisture basis.

In addition to small-plot variety tests, large-scale winter wheat drill strip trials have been conducted across the state the last two years. Cooperating growers were provided with 50 to 80 pounds of seed of each variety to be tested. Seed for 1994 trials was donated by Eric and Marnie Anderson and Pendleton Grain Growers. Cooperators, often with assistance of local county agents, established single-replicate drill strip plots on their farms. These drill strips were managed and harvested by the

cooperating grower with standard field equipment. Weigh wagons or weigh pads were used to obtain accurate yield data. Table 2 lists sites, grower cooperators, and other background information about 1994 drill strip plot test sites. Two-quart grain samples were saved from each plot and used for test weight and protein analyses.

RESULTS AND DISCUSSION

Yield data for winter and spring grains over all five Columbia Basin test sites are presented in Tables 3-6, along with state-wide averages. Individual site data are presented in Tables 7-25. Data from winter wheat drill strip plots are presented in Table 26.

Winter Wheats and Triticales. Stephens, W301, and Gene were the highest yielding wheat varieties averaged across and within dryland locations (Table 3). These three varieties were also high yielders in 1993, along with Rod and Rohde, suggesting wide adaptation. W301 and Rod were among the highest yielding varieties at LaGrande and Hermiston, while Stephens and Gene showed below trial average performance at these sites. Celia triticale was the highest yielding grain across dryland locations. Growers interested in feed grains should think seriously about triticales as yield and disease resistance are exceptional.

Bonneville, a new hard red winter wheat released by the University of Idaho, was the only variety to consistently lodge across sites (Tables 8, 10, 11). Other varieties showed some lodging, but with no consistency. Grain shattered at Moro (Table 9) with Lambert and Kmor exhibiting highest levels. Protein levels were low at Moro (Table 9) and Heppner (Table 10), suggesting possible nitrogen shortages (Miller and Pan, 1993). Pendleton winter grain proteins (Table 11) were in the desired range with an average of 9.2 percent. Proteins were high at both irrigated sites suggesting surplus nitrogen was present in the soil system. Gene and Madsen (except for Heppner) had above average protein levels across locations, while MacVicar was consistently at or below trial average.

The Moro trial had large numbers of white-heads caused by the dryland root rot complex (*Fusarium graminearum*) and also had a low incidence of flag smut despite the fact that seed was treated with carboxin fungicide. Russian wheat aphids invaded the Heppner plots late in the season but did not appear to have a significant impact on winter grains. Hermiston plots were free of disease and insect pests but did show some winter injury.

Average test weight was below 60 pounds per bushel at all sites but Pendleton. Seeds per pound were also high. Together, these factors suggest that stress late in the season caused small or shrunken seed to be produced at most sites. Test weight performance of wheat varieties varied across sites. Triticale test weights are interesting to compare. Look at the test weights for Bob and Whitman triticales versus that for Celia (Tables 7-11). Bob and Whitman are older-type triticales with wrinkled seed. Celia was selected for improved seed quality and has seed and test weights similar to those of wheat.

Drill strip test data are presented in Table 26. Six varieties were included in the 1994 standard set - Gene, MacVicar, Madsen, Rod, Rohde and Stephens. Rod had the highest yield averaged across sites and was also the highest yielding variety in 9 of the 14 tests. Rod was only mediocre in

small-plot performance this year, though it has performed very well in past years. Other varieties were similar in average yield performance.

Winter Barleys. Winter barley data are presented in Table 4 and Tables 12-15. Winter barleys were grown at Moro but harvested grain was lost during processing, hence Moro data is not available. Hesk and Hundred were the highest yielding varieties across dryland locations though their yields are not statistically different from those of Kold or Showin. Kold had better test weights than these other varieties at all locations but Hermiston. Hoody is a hooded, awned variety released for use as a hay. Gwen was released as a dryland variety, but actually performed best this year under irrigated production at Hermiston. Hesk, Hundred, Kold, or Showin appear to be the varieties of choice for the Columbia Basin. Scio has been included in the 1995 variety tests.

Spring Wheats and Triticales. Spring wheat and triticale data are presented in Table 5 and Tables 16-20. Yields at Heppner (Table 19) were significantly impacted by Russian wheat aphid infestation. Triticales and hard wheats were less affected by aphids than soft white wheats. Averaged across dryland locations, Wakanz and Westbred 926R were the highest yielding varieties (Table 5) though they were not statistically significantly different in yield from many other varieties. WB926R has performed well over years. Wakanz is a Hessian fly resistant variety released by Washington State University. It has shown erratic performance over years, but does have excellent yield potential. Wakanz is to be supplanted by Wawawai which also has Hessian fly resistance. Penawawa, the most commonly grown spring wheat in the state (Oregon Agricultural Statistics Service, 1994), was at or below the trial average yield at all Columbia Basin sites and in across site averages. Spring triticales, like their winter counterparts, did extremely well at specific sites and across locations (Table 5 - Victoria or RSI2700).

Spring Barleys. Spring barley data are presented in Table 6 and Tables 21-25. Across dryland sites there were no statistical differences in yield among varieties. Steptoe had the highest yield across dryland locations, as was the case last year, but Baronesse also performed well. As in 1993, Baronesse showed above trial average yield at most sites and exhibited superior test weights. We do not yet know the volunteer potential of these newer varieties in comparison to Steptoe, but our expectation is that there will be less of a problem.

CONCLUSIONS

If you look carefully at the data presented in the accompanying tables, you will discover that there are few, if any, statistical differences in yield among newer varieties. Some would argue that we need to refine our testing program in order to detect differences. I would suggest that our data is adequate (coefficients of variation, a measure of plot-to-plot variability, are not unreasonable) and that varieties are simply similar in yield performance. The drill strip test data presented in Table 26 substantiates this point. When averaged across sites, variety performance tends to be very similar. While high yield is still a goal in all breeding programs, many newer varieties have other attributes that give them an edge over existing varieties. For example, while Baronesse and Steptoe yields are similar, Baronesse has vastly superior test weights.

While Stephens and MacVicar yields are similar, MacVicar consistently has a lower grain protein percentage. As you look through these data and others available to you, remember to think about special variety characteristics that may be of importance to your farming and marketing strategies. Don't judge a variety by it's yield alone.

FOR MORE INFORMATION

Use more than one year's data to make variety selection decisions. For more information, contact your local OSU Extension Service office and ask for a copy of Special Report 755, Winter Cereals for Oregon. This publication contains current year and historic variety performance data for all winter cereals. Your county agent may have other data as well.

The state-wide variety testing program is a grower-driven program. If you have ideas about varieties to be included in your area or have suggestions for program improvement, contact Russ Karow, OSU Extension Cereals Specialist (503-737-5857).

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Table 1. 1994 state-wide cereal variety testing program locations, stie coordinators and grower cooperators, Oregon

Trial name	Trial type	Trial location	Trial coordinator	Grower cooperator
Corvallis	all grains - dryland	Hyslop Farm	Russ Karow, Helle Ruddenklau	
Heppner	all grains - dryland	Anderson Farm	Pam Zwer, Mike Moore	Charlie Anderson
Hermiston	all grains - irrigated	Hermiston Expt. Station	Russ Karow, Gary Reed, Mike Moore	
Klamath Falls	all grains - irrigated	Klamath Expt. Station	Randy Dovel	
LaGrande	all grains - irrigated	Cuthbert Farm	Pam Zwer, Mike Moore	John Cuthbert
Madras	all grains - irrigated	Central OR Expt. Station	Steve James, Mylen Bohle	
Medford	all grains - dryland	Southern OR Expt. Station	Rich Roseberg	
Moro	all grains - dryland	Sherman Expt. Station	Pam Zwer, Mike Moore	
North Valley	winter grains - dryland	Goetze Farm	Russ Karow, Helle Ruddenklau	Norm Goetze
North Valley	spring grains - dryland	Moritz Farm	Russ Karow, Helle Ruddenklau	Sandy & Mike Moritz
Ontario	all grains - irrigated	Malheur Expt. Station	Mike Barnum, Clint Shock	
Pendleton	all grains - dryland	Pendleton Expt. Station	Pam Zwer, Mike Moore	

Table 2. Growers, locations, and cooperating county agents for 1994 winter wheat drill strip test plots, Oregon and S.W. Washington

Grower	City	County	Irrigation	County Agent
Bruce and Helle Ruddenklau	Amity	Yamhill	No	Susan Aldrich-Markham
Bob Barnes	Salem	Marion	No	Gale Gingrich
Bill Guthrie	Powell Butte	Crook	Yes	Mylen Bohle
Mike Bernards	McMinnville	Yamhill	No	Susan Aldrich-Markham
Alan Klages	Joseph	Wallowa	Yes	Gordon Cook
Mark Hales	Pendleton	Umatilla	No	Mike Stoltz
Mary Ann Hill	Pendleton	Umatilla	No	Mike Stoltz
Bill Miller	Dufur	Wasco	No	Sandy Macnab
Steve Johnson	The Dalles	Wasco	No	Sandy Macnab
Van and Tom Rietmann	Condon	Gilliam	No	Phil Nesse
Dean Nichols	Dayton, WA	Columbia, WA	No	Roland Sherman
Mike Weimer	Arlington	Gilliam	No	Phil Nesse
M & M Ranch	Wasco	Sherman	No	Sandy Macnab
Jim Bird	Grass Valley	Sherman	No	Sandy Macnab

Table 3. 1994 winter wheat and triticale yields for the Columbia Basin and an average over 10 sites in the state-wide variety testing network.

Variety/ line	Market class	Moro	Heppner	Pendleton	Dryland average	Hermiston	LaGrande	10-site average
				(60 lb bushels per acre; 10 percent moisture)				
Cashup	SW	37	64	70	57	131	94	100
Daws	SW	37	56	78	57	121	95	96
Durhiums Pride	SW	33	57	71	53		97	
Gene	SW	39	77	86	68	96	90	98
Hill 81	SW	37	70	81	62	114	92	99
Kmor	SW	27	67	78	57	133	94	
Lambert	SW	22	68	69	53	107		
Lewjain	SW	40	61	75	59	128	78	
MacVicar	SW	36	74	83	64	151	93	105
Madsen	SW	36	69	78	61	118	102	95
Malcolm	SW	35	83	85	67	141	85	102
Nugaines	SW	34	62	65	54	106	95	
Rod	SW	45	65	69	60	140	99	96
Stephens	SW	39	83	88	70	114	88	102
W301	SW	40	80	89	70	128	91	103
Yamhill	SW	26	65	60	50	104	94	85
WA7663	SW	41	64	78	61	138	102	101
Hyak	Club	40	66	85	64	106	81	
Rely	Club	37	55	75	56	119	82	
Rohde	Club	47	62	77	62	121	96	96
Rulo	Club	29	54	70	51		87	
Bonneville	HR	27	34	24	28		56	
Hoff	HR	44	58	71	57	109	93	95
ID426	HR						104	
Celia	Triticale	49	73	94	72	134	90	101
Bob	Triticale	29	62	84	58	105	82	97
Whitman	Triticale	46	69	96	70	119	93	104
Trial average		37	65	76	59	121	91	96
PLSD (5%)		9	10	11	12	21	17	NS
CV (%)		16	9	9	13	10	11	12
P-VALUE		0.00	0.00	0.00	0.00	0.00	0.00	0.07

Trial averages may include some data not shown.

Table 4. 1994 winter barley yields for the Columbia Basin and an average over 9 sites in the state-wide variety testing network. Oregon.

Variety	Market class	Heppner	Pendleton	Dryland average	Hermiston	LaGrande	9-site average
				Yields (lb/a; as is moisture)			
Gwen	6RF	3793	4607	4200	6448	3350	4916
Hesk	6RF	4954	6464	5709	5794	4784	5631
Hoody	6RF	3453	3039	3246	3728	3308	3575
Hundred	6RF	4924	6301	5613	6020	4820	5887
Kamiak	6RF	2481	3254	2868	3767	3059	3671
Kold	6RF	4412	5343	4878	4364	4556	5296
Showin	6RF	4316	5793	5055	6938	4756	5652
Steptoe	6RF	3666	4658	4162	4480	4714	4683
Trial average		4000	4932	4466	5192	4168	4914
PLSD (5%)		968	778	845	1837	831	663
CV (%)		14	9	10	20	11	13
P-VALUE		0.01	0.00	0.00	0.01	0.01	0.00

Table 5. 1994 spring wheat and triticale yields for the Columbia Basin and an average over 11 sites in the state-wide variety testing network. Oregon.

Variety/ line	Market class	Heppner	Moro	Pendleton	Dryland average	Hermiston	LaGrande	11-site average
				Yields (60 lb bushels per acre; 10 percent moisture)				
Alpowa	SW	15	43	46	45	71	49	62
Centennial	SW	11	46	39	43	76	39	67
Dirkwin	SW	2	36	19	27	58	37	52
Owens	SW	8	39	35	37	67	41	59
Penawawa	SW	5	41	33	37	56	35	58
Treasure	SW	16	42	37	40	71	40	61
Wakanz	SW	12	47	69	58	69	42	63
Wawawai	SW	9	41	63	52	73	39	
ID392	SW	17	46	32	39	67	34	58
Calorwa	Club	12	48	43	45	59	48	57
Klasic	HW	22	41	46	43	63	48	61
ID377S	HW	24	44	50	47	75	39	63
Westbred 926R	HR	23	43	65	54	63	38	56
Yecora Rojo	HR	24	48	38	43	60	53	57
Durex	Durum	16	32			40		
Reva	Durum	7	17			12		
Westbred 881	Durum	14	23			41		
D9333	Durum					34		
OR488012	Durum	17	37					
Juan	Triticale	12	41	42	41	79	31	58
Victoria	Triticale	22	43	52	47	76	33	66
RSI 2700	Triticale			60		61		
Trial average		14	40	43	44	60	40	60
PLSD (5%)		6	7	9	13	14	8	7
CV (%)		27	11	13	22	14	12	14
P-VALUE		0.00	0.00	0.00	0.04	0.00	0.00	0.00

Trial averages may include some data not shown.

Table 6. 1994 spring barley yields for the Columbia Basin and an average over 10 sites in the state-wide variety testing network. Oregon.

Variety	Market class	Moro	Heppner	Pendleton	Dryland average	Hermiston	LaGrande	10-site average
				Yield (lb/a; as is moisture)				
Baronesse	2RF	3025	2937	5423	3795	6994	3786	5127
Colter	6RF	3074	1585	4888	3182	6777	3717	4829
Columbia	6RF					6458		
Crest	2RM	2783	2290	4693	3255	6499	4150	4642
Crystal	2RM	2815	1462	5190	3156	5202	3575	4205
Maranna	6RF	3136	1527	5279	3314	7361	3547	5252
Russell	6RM	2822	1479	4452	2918	6198	3629	4694
Steptoe	6RF	3301	3210	4894	3802	5270	3232	4592
Sunstar Bravo	6RF	3121	2500	4730	3450		4017	
Average		3010	2124	4944	3359	6393	3707	4849
PLSD (5%)		NS	565	461	NS	1351	NS	570
CV (%)		10	15	17	13	12	13	13
P-VALUE		0.44	0.00	0.01	0.21	0.04	0.46	0.01

Table 7. 1994 state-wide variety testing program winter wheat and triticale trial on the Hermiston Agricultural Research and Extension Center, Hermiston, OR

Variety/ line	Market class	Plant height (in)	Yield (bu/a)	Test weight (lb/bu)	1000 kernel wgt (g)	Seeds per pound	Protein percent
Hyak	Club	33	105.5	58.8	38.2	11865	12.4
Rely	Club	36	119.1	58.7	34.3	13224	11.7
Rohde	Club	32	121.2	60.2	37.2	12184	11.4
Hoff	HR	35	108.8	62.7	50.5	8982	12.9
Cashup	SW	36	130.5	60.3	39.4	11504	10.7
Daws	SW	34	121.3	58.6	43.7	10373	11.3
Gene	SW	30	95.9	58.6	43.7	10380	12.3
Hill 81	SW	36	114.0	60.5	41.7	10870	11.8
Kmor	SW	35	133.4	57.5	39.1	11601	11.1
Lambert	SW	36	107.1	60.2	51.0	8894	11.6
Lewjain	SW	34	128.3	57.8	36.5	12438	11.6
MacVicar	SW	34	151.4	59.5	49.7	9121	11.0
Madsen	SW	35	117.8	60.4	43.9	10326	12.0
Malcolm	SW	32	141.4	59.7	51.3	8837	11.4
Nugaines	SW	33	105.5	59.5	37.0	12269	11.2
Rod	SW	36	139.7	58.5	42.2	10756	11.0
Stephens	SW	32	113.8	58.6	52.5	8635	11.4
W301	SW	34	128.2	59.8	55.2	8222	11.4
WA7663	SW	35	138.2	57.4	41.1	11045	11.2
Yamhill	SW	37	103.7	57.2	46.5	9761	12.3
Bob	Triticale	45	105.2	51.1	40.8	11126	11.1
Celia	Triticale	38	134.0	58.0	48.4	9372	10.9
Whitman	Triticale	44	119.1	53.9	48.8	9295	10.8
Trial average		35	120.5	58.8	43.6	10404	11.6
PLSD (5%)		3	20.5	1.9	5.4	1288	0.4
CV (%)		5	10	2	7	7	2
P-VALUE		0.00	0.00	0.00	0.00	0.00	0.00

No lodging or shattering was observed. Yields adjusted to 10 percent moisture, protein to 12 percent moisture.

Table 8. 1994 state-wide variety testing program winter wheat and triticale trial on the John Cuthbert Ranch, LaGrane, OR

Variety/ line	Market class	Plant height (in)	Lodging percent	Yield (bu/a)	Test Weight (lb/bu)	1000 kernel wgt (g)	Seeds per pound	Protein percent	Moisture percent
Hyak	Club	39	30	81.5	60.4	32.5	13944	11.8	8.3
Rely	Club	42	38	82.4	60.7	33.1	13704	11.5	8.2
Rohde	Club	40	20	96.4	62.8	35.3	12839	12.1	7.8
WA7622	Club	41	3	86.7	57.0	27.8	16317	12.5	8.5
Bonneville	HR	41	53	55.8	62.2	33.1	13692	12.6	8.8
Hoff	HR	36	0	93.1	63.1	39.3	11551	12.1	8.9
Cashup	SW	39	5	93.5	58.6	30.8	14742	12.4	8.3
Daws	SW	40	0	95.1	58.7	31.0	14646	12.8	8.5
Durhiums Pride	SW	40	0	97.2	59.7	35.8	12670	12.1	8.6
Gene	SW	35	0	90.3	58.4	36.5	12417	13.3	8.9
Hill 81	SW	41	0	91.7	60.0	32.3	14043	12.2	8.7
ID426	SW	40	0	104.2	59.4	41.4	10949	12.3	8.9
Kmor	SW	39	7	94.3	58.5	30.5	14858	11.8	8.8
Lewjain	SW	37	13	77.7	57.9	26.6	17033	12.7	8.4
MacVicar	SW	37	0	93.0	58.6	36.5	12427	12.2	8.8
Madsen	SW	38	0	101.9	59.8	37.1	12217	12.6	8.6
Malcolm	SW	36	0	85.5	57.6	35.1	12923	12.5	8.7
Nugaines	SW	36	5	95.4	59.4	30.2	15035	11.9	8.5
Rod	SW	40	7	99.1	57.4	35.8	12681	11.0	8.7
Stephens	SW	36	0	88.1	58.2	39.7	11434	12.2	8.9
W301	SW	36	2	91.2	57.1	37.6	12064	12.8	8.7
WA7663	SW	39	7	102.3	56.6	33.5	13540	11.8	8.7
Yamhill	SW	46	0	94.2	58.6	38.8	11691	12.6	8.9
Bob	Triticale	49	3	82.4	51.1	30.6	14838	12.4	9.3
Celia	Triticale	40	0	90.2	55.4	35.6	12742	12.0	9.0
Whitman	Triticale	48	13	92.9	53.6	41.5	10938	11.3	9.6
Trial Average		40	7	91.2	58.7	34.2	13259	12.3	8.7
PLSD (5%)		3	23	16.7	2.1	5.3	2055	1.1	0.3
CV (%)		6	201	11	2	9	9	5	2
P-VALUE		0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00

Yields adjusted to 10 percent moisture, proteins to 12 percent moisture.

Table 9. 1994 state-wide variety testing program winter wheat and triticale trial on the Sherman Experiment Station, Moro, OR

Variety/ line	Market class	Plant height (in)	Shatter percent	Yield (bu/a)	Test weight (lb/bu)	1000 kernel wgt(g)	Seeds per pound	Protein percent	Moisture percent
Hyak	Club	25	3	39.6	57.8	30.2	15005	8.0	9.1
Rely	Club	26	8	37.1	57.5	27.7	16375	7.4	8.4
Rohde	Club	29	7	47.4	61.1	34.3	13236	7.1	8.7
Rulo	Club	26	3	29.4	57.4	30.9	14694	7.5	8.8
Bonneville	HRW	32	10	26.8	60.6	32.4	14000	8.8	9.7
Hoff	HRW	31	2	43.6	63.0	37.4	12138	7.9	8.9
Cashup	SW	27	2	37.0	60.0	35.2	12875	7.7	9.3
Daws	SW	29	12	36.6	59.2	36.8	12326	7.5	9.3
Durhiums Pride	SW	27	5	32.8	59.7	37.1	12226	7.0	9.1
Gene	SW	27	10	39.4	58.1	40.7	11153	8.2	9.4
Hill 81	SW	28	3	36.8	60.0	33.5	13528	8.2	9.2
Kmor	SW	27	15	26.7	58.9	33.7	13472	7.5	9.3
Lambert	SW	32	20	22.5	55.8	37.5	12086	8.4	10.0
Lewjain	SW	25	5	40.1	61.9	34.1	13302	7.7	8.7
MacVicar	SW	29	12	35.9	59.6	43.5	10428	7.6	9.6
Madsen	SW	27	5	35.9	59.9	38.9	11661	8.6	9.1
Malcolm	SW	27	8	34.8	59.2	37.9	11968	7.6	9.1
Nugaines	SW	26	0	34.1	62.1	32.7	13872	7.6	9.2
Rod	SW	29	3	45.2	58.3	37.4	12119	7.3	9.1
Stephens	SW	28	13	38.6	58.7	42.1	10767	7.9	10.0
W301	SW	29	8	39.8	59.5	40.0	11340	7.8	9.1
WA7663	SW	28	3	41.1	57.9	36.8	12316	6.7	8.7
Yamhill	SW	27	5	26.3	50.9	27.6	16417	9.7	9.8
Bob	Triticale	38	0	29.2	51.0	32.7	13872	7.4	10.3
Celia	Triticale	32	2	48.9	58.0	41.0	11063	6.0	9.1
Whitman	Triticale	36	0	45.8	53.3	39.4	11521	7.0	9.9
Trial average		29	7	36.7	58.6	35.6	12749	7.8	9.3
PLSD (5%)		4	12	9.3	1.4	4.1	1469	0.8	0.8
CV (%)		8	109	16	2	7	7	7	5
P-VALUE		0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00

No lodging was observed.

Flag smut was observed even though seed treatment was used.

Yields are adjusted to 10 percent moisture, protein to 12 percent moisture.

Table 10. 1994 state-wide variety testing program winter wheat and triticale trial on the Charlie Anderson Ranch, Heppner, OR

Variety	Market class	Plant height (in)	Lodging percent	Yield (bu/a)	Test weight (lb/bu)	1000 kernel wgt (g)	Seeds per pound	Protein percent	Moisture percent
Hyak	Club	38	0	66.3	57.8	37.0	12269	8.6	9.0
Rely	Club	38	0	55.4	59.4	39.7	11417	8.9	9.2
Rohde	Club	37	3	61.5	58.8	37.5	12086	8.7	9.0
Rulo	Club	36	0	53.9	58.7	37.4	12128	9.1	10.2
Bonneville	HRW	43	40	33.9	58.9	34.6	13121	10.0	10.6
Hoff	HRW	40	2	57.6	60.4	39.2	11580	9.8	10.1
Cashup	SWW	35	0	63.5	59.5	37.8	12010	10.1	12.1
Daws	SWW	36	0	56.5	57.1	43.3	10476	9.5	12.6
Durhiums Pride	SWW	38	3	56.6	57.1	46.8	9692	9.2	12.9
Gene	SWW	33	0	77.2	56.9	39.5	11475	9.3	9.7
Hill 81	SWW	40	0	69.5	59.1	38.2	11865	9.0	10.7
Kmor	SWW	35	0	67.3	57.8	38.8	11691	7.8	11.5
Lambert	SWW	39	0	67.6	56.8	47.9	9476	8.6	9.9
Lewjain	SWW	35	2	60.9	59.3	35.9	12625	8.8	12.0
MacVicar	SWW	36	0	74.2	62.4	50.9	8912	7.7	10.5
Madsen	SWW	35	0	69.4	60.6	42.0	10792	8.1	12.2
Malcolm	SWW	36	0	82.7	59.2	49.1	9244	8.1	11.5
Nugaines	SWW	32	0	61.6	59.9	38.8	11700	8.2	10.3
Rod	SWW	37	0	65.1	56.4	47.6	9535	8.2	13.3
Stephens	SWW	35	0	82.9	59.4	47.5	9556	8.9	9.8
W301	SWW	34	0	79.9	58.6	46.7	9713	8.6	9.6
WA7663	SWW	33	0	63.8	55.7	47.7	9503	8.4	13.7
Yamhill	SWW	40	7	64.6	58.0	44.2	10269	8.3	9.9
Bob	Triticale	42	0	61.5	49.6	38.6	11751	7.5	13.1
Celia	Triticale	36	0	73.2	58.1	40.7	11137	7.6	10.6
Whitman	Triticale	44	0	69.2	51.4	41.2	11010	8.2	10.8
Trial average		37	2	64.9	57.8	41.5	10941	8.7	10.9
PLSD (5%)		3	14	9.8	4.0	4.8	1265	1.5	1.4
CV (%)		4	445	9	4	7	7	11	8
P-VALUE		0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00

No shattering was observed.

Yields adjusted to 10 percent moisture, proteins to 12 percent moisture.

Table 11. 1994 state-wide variety testing program winter wheat and triticale trial on the Pendleton Experiment Station, Pendleton, OR

Variety/ line	Market class	Heading date	Plant height (in)	Lodging percent	Yield (bu/a)	Test weight (lb/bu)	1000 kernel wgt (g)	Seeds per pound	Protein percent	Moisture percent
Hyak	Club	135	38	0	85.3	61.4	35.8	12670	8.6	6.5
Rely	Club	143	38	8	75.2	61.1	34.4	13198	9.0	6.3
Rohde	Club	140	35	10	77.2	63.2	35.1	12934	8.6	5.9
Rulo	Club	143	37	0	69.6	59.1	32.4	13987	9.2	6.4
Bonneville	HRW	143	39	95	24.1	61.6	34.3	13224	11.5	7.7
Hoff	HRW	133	38	15	71.0	63.6	37.3	12151	9.6	7.7
Cashup	SWW	143	34	0	70.1	60.5	33.2	13675	9.5	6.8
Daws	SWW	141	35	2	78.5	61.4	38.1	11906	9.5	6.8
Durhiums	SWW	142	37	1	70.7	61.9	36.3	12486	8.9	6.7
Pride Gene	SWW	137	34	2	86.4	59.6	34.0	13341	10.3	7.4
Hill 81	SWW	143	38	0	80.6	60.3	31.0	14646	9.0	7.1
Kmor	SWW	144	33	0	77.7	59.9	33.0	13733	8.9	6.6
Lambert	SWW	139	40	0	69.0	60.5	42.9	10566	9.4	7.7
Lewjain	SWW	139	35	0	75.0	61.8	32.5	13944	9.3	6.5
MacVicar	SWW	141	36	0	82.7	61.8	40.2	11292	9.2	7.2
Madsen	SWW	144	36	0	77.8	61.3	35.3	12861	10.8	7.5
Malcolm	SWW	139	36	0	84.6	61.2	39.6	11446	9.0	7.2
Nugaines	SWW	143	34	3	65.1	60.9	30.9	14694	8.6	6.8
Rod	SWW	144	36	30	69.1	59.6	39.3	11551	8.1	7.4
Stephens	SWW	138	34	0	88.0	61.5	43.0	10549	9.5	7.2
W301	SWW	139	35	0	89.2	61.6	42.7	10623	9.5	7.0
WA7663	SWW	145	35	0	78.3	59.5	35.3	12839	8.1	7.0
Yamhill	SWW	142	40	2	59.8	57.9	33.8	13408	10.0	7.9
Bob	Triticale	146	44	0	84.5	53.8	37.3	12161	8.0	7.8
Celia	Triticale	138	39	0	94.2	59.8	38.0	11937	7.8	7.5
Whitman	Triticale	130	48	0	96.3	57.3	44.4	10223	8.2	8.1
Trial average		141	37	6	76.4	60.6	36.0	12600	9.2	7.1
PLSD (5%)		2	3	12	11.3	1.0	3.1	1085	0.7	0.5
CV (%)		1	4	129	9	1	5	5	5	4
P-VALUE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

No shattering was observed.

Yields are adjusted to 10 percent moisture, proteins to 12 percent moisture.

Table 12. 1994 state-wide variety testing program winter barley trial on the Hermiston Research and Extension Center, Hermiston, OR

Variety	Market class	Stand rating 4-1-94	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)	1000 kernel wgt (g)
Gwen	6RF	2.7	32	6448	51.0	38.0
Hesk	6RF	2.3	33	5794	50.4	42.1
Hoody	6RF	3.7	34	3728	47.3	37.4
Hundred	6RF	4.0	30	6020	48.9	37.2
Kamiak	6RF	4.0	31	3767	52.2	40.5
Kold	6RF	3.0	34	4364	50.7	39.0
Showin	6RF	4.3	29	6938	51.2	38.9
Steptoe	6RF	0.7	35	4480	50.6	53.9
Trial average		3.1	32	5192	50.3	40.9
PLSD (5%)		1.32	NS	1837	1.6	3.9
CV (%)		24	8	20	2	5
P-VALUE		0.01	0.15	0.01	0.00	0.00

Stand rating 1-5 scale (poor to excellent).

No lodging or shattering was observed.

Table 13. 1994 state-wide variety testing program winter barley trial on the John Cuthbert Ranch, LaGrande, OR

Variety	Market class	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)	1000 kernel wgt (g)	Seeds per pound
Gwen	6RF	29	3350	51.0	32.4	13987
Hesk	6RF	30	4784	50.3	37.4	12119
Hoody	6RF	36	3308	46.5	40.2	11275
Hundred	6RF	30	4820	48.0	32.2	14087
Kamiak	6RF	32	3059	51.9	38.2	11865
Kold	6RF	30	4556	52.1	39.5	11484
Showin	6RF	23	4756	49.3	37.7	12022
Steptoe	6RF	30	4714	50.7	48.3	9385
Trial average		30	4168	50.0	38.3	11856
PLSD (5%)		5	831	2.0	5.4	1672
CV (%)		9	11	2	8	8
P-VALUE		0.01	0.01	0.01	0.00	0.00

No lodging or shattering was observed.

Table 14. 1994 state-wide variety testing program winter barley trial on the Charlie Anderson Ranch, Heppner, OR

Variety	Market class	Plant height (in)	Lodging percent	Yield lb/a	Test weight (lb/bu)
Gwen	6RF	37	0	3793	54.5
Hesk	6RF	34	0	4954	52.6
Hoody	6RF	36	17	3453	51.3
Hundred	6RF	33	3	4924	51.0
Kamiak	6RF	37	8	2481	53.0
Kold	6RF	31	0	4412	54.4
Showin	6RF	21	0	4316	51.5
Steptoe	6RF	36	0	3666	52.7
Trial average		33	4	4000	52.6
PLSD (5%)		6	11	968	0.8
CV (%)		10	165	14	1
P-VALUE		0.00	0.05	0.01	0.00

No shattering was observed.

Table 15. 1994 state-wide variety testing program winter barley trial on the Pendleton Experiment Station, Pendleton, OR

Name	Market class	Plant height (in)	Lodging percent	Shatter percent	Yield (lb/a)	Test weight (lb/bu)
Gwen	6RF	37	0	3	4607	52.6
Hesk	6RF	34	0	5	6464	50.8
Hoody	6RF	40	27	0	3039	49.0
Hundred	6RF	31	0	0	6301	49.3
Kamiak	6RF	38	95	17	3254	52.2
Kold	6RF	32	0	13	5343	53.2
Showin	6RF	25	0	0	5793	50.1
Steptoe	6RF	35	3	2	4658	51.9
Trial average		34	16	5	4932	51.2
PLSD (5%)		3	11	9	778	1.1
CV (%)		5	40	100	9	1
P-VALUE		0.00	0.00	0.01	0.00	0.00

No shattering was observed.

Table 16. 1994 state-wide variety testing program spring grain trial on the Hermiston Research and Extension Center, Hermiston, OR

Variety/ line	Market class	Plant height (in)	Yield (bu/a)	Test weight (lb/bu)	Protein percent	Moisture percent
Calorwa	Club	31	59.3	61.3	13.1	10.3
D9333	Durum	31	34.0	61.2	16.0	10.6
Durex	Durum	30	40.4	60.8	15.4	10.9
Reva	Durum	23	11.7	57.0	17.0	10.3
Westbred 881	Durum	30	40.7	59.1	15.8	10.7
Westbred 926R	HR	32	62.9	62.3	14.7	11.0
Yecora Rojo	HR	23	59.7	63.0	15.2	10.3
ID 377S	HW	36	74.9	62.9	14.3	10.8
Klasic	HW	32	63.2	61.4	13.7	10.4
Alpowa	SW	34	70.6	62.2	12.2	9.6
Centennial	SW	32	76.0	61.8	12.4	10.1
Dirkwin	SW	36	58.0	56.2	12.0	11.6
ID 392	SW	36	67.1	61.8	12.0	10.2
ML 042A	SW	31	52.7	61.1	14.2	10.5
Owens	SW	35	67.0	60.4	13.0	10.6
Penawawa	SW	32	55.5	60.5	13.3	9.8
Treasure	SW	32	70.7	59.5	12.3	11.0
Wakanz	SW	36	68.9	59.1	12.4	10.9
Wawawai (WA 7712)	SW	40	73.1	61.5	12.1	10.5
Juan	Triticale	53	78.7	52.8	12.1	11.4
RCI 2700	Triticale	62	61.1	47.5	13.5	11.1
Victoria	Triticale	50	76.5	52.0	12.0	10.8
Trial average		35	60.1	59.3	13.6	10.6
PLSD (5%)		5	14.4	1.9	1.0	1.2
CV (%)		8	14	2	4	7
P-VALUE		0.00	0.00	0.00	0.00	0.00

Yields adjusted to 60 lb bushels and 10 percent moisture.

Proteins adjusted to 12 percent moisture.

Table 17. 1994 state-wide variety testing program spring grain trial on the John Cuthbert Ranch, LaGrande, OR

Variety/ line	Market class	Plant height (in)	Yield (bu/a)	Test weight (lb/bu)	Protein percent	Moisture percent
Calorwa	Club	33	47.8	52.7	14.0	8.3
Westbred 926R	HR	29	38.2	51.3	16.0	9.0
Yecora Rojo	HR	28	52.7	55.2	15.2	8.8
ID377S	HW	31	39.0	51.6	16.3	9.3
Klasic	HW	31	48.0	54.3	15.4	8.8
Alpowa	SW	34	49.0	53.3	14.4	8.4
Centennial	SW	35	38.9	53.9	14.1	8.8
Dirkwin	SW	33	36.8	49.3	14.3	9.7
ID392	SW	34	33.8	51.4	14.2	8.7
Owens	SW	37	41.1	51.2	15.1	8.7
Penawawa	SW	35	35.4	51.9	15.8	8.6
Treasure	SW	33	40.1	51.9	15.7	9.0
Wakanz	SW	35	41.8	49.7	14.5	9.2
Wawawai	SW	38	38.8	53.3	14.1	9.1
Juan	Triticale	34	30.5	44.8	13.4	10.0
Victoria	Triticale	33	32.8	43.7	14.0	9.8
Trial average		33	40.3	51.2	14.8	9.0
PLSD (5%)		NS	8.1	2.2	1.1	0.5
CV (%)		15	12	3	4	3
P-VALUE		0.66	0.00	0.00	0.00	0.00

No lodging or shattering observed.

Yields adjusted to 10 percent moisture, proteins to 12 moisture.

Table 18. 1994 state-wide variety testing program spring grain trial on the Sherman Experiment Station, Moro, OR

Name	Market class	Plant height (in)	Yield (bu/a)	Test weight (lb/bu)	Protein percent	Moisture percent
Calorwa	Club	22	48.1	59.0	12.1	8.6
Durex	Durum	23	31.6	59.5	13.7	9.9
OR488012	Durum	21	37.3	60.1	13.0	9.8
Reva	Durum	18	16.6	57.4	15.9	9.6
Westbred 881	Durum	20	23.1	57.5	14.3	10.0
Westbred 926R	HR	26	43.2	61.6	12.9	9.8
Yecora Rojo	HR	20	48.2	62.4	12.7	9.4
ID377S	HW	27	43.5	58.6	12.9	9.3
Klasic	HW	21	41.1	61.2	13.1	9.4
Alpowa	SW	27	42.6	59.1	11.0	9.2
Centennial	SW	25	45.7	61.4	11.9	8.6
Dirkwin	SW	28	36.0	57.0	12.5	9.2
ID392	SW	28	45.5	59.6	11.5	8.8
Owens	SW	30	39.0	58.2	12.7	9.0
Penawawa	SW	23	40.7	58.7	12.3	9.0
Treasure	SW	25	42.2	58.6	11.9	8.9
Wakanz	SW	25	46.5	56.9	12.4	8.9
Wawawai	SW	30	40.8	58.3	12.0	9.2
Juan	Triticale	37	40.9	50.1	11.2	9.9
Victoria	Triticale	32	42.9	48.7	11.2	9.7
Trial average		26	39.8	58.2	12.6	9.3
PLSD (5%)		3	7.1	1.4	0.7	0.5
CV (%)		7	11	1	3	4
P-VALUE		0.00	0.00	0.00	0.00	0.00

No lodging or shattering observed.

Yields adjusted to 10 percent moisture, proteins to 12 percent moisture.

Table 19. 1994 state-wide variety testing program spring grain trial on the Charlie Anderson Ranch, Heppner, OR

Variety/ line	Market class	Plant height (in)	Lodging percent	Yield (bu/a)	Test weight (lb/bu)	Protein percent	Moisture percent
Calorwa	Club	24	0	12.1	55.3	17.3	9.5
Durex	Durum	21	0	16.1	56.6	17.2	9.9
OR488012	Durum	20	0	17.5	57.5	16.2	10.0
Reva	Durum	18	0	6.6	--	--	--
Westbred 881	Durum	23	3	13.9	55.5	17.5	10.2
Westbred 926R	HR	28	0	23.1	55.1	17.2	9.9
Yecora Rojo	HR	23	0	23.6	57.2	16.8	9.5
ID377S	HW	28	0	24.4	56.3	16.6	10.3
Klasic	HW	20	0	22.3	56.6	16.9	9.8
Alpowa	SW	25	0	15.1	57.9	17.1	9.5
Centennial	SW	24	0	11.1	56.7	16.9	9.9
Dirkwin	SW	25	0	2.1	--	--	--
ID392	SW	27	0	17.2	55.3	16.6	9.6
Owens	SW	25	0	8.3	--	--	--
Penawawa	SW	21	0	5.1	--	--	--
Treasure	SW	27	0	15.5	55.5	17.3	9.6
Wakanz	SW	29	0	12.3	57.1	16.5	9.7
Wawawai	SW	32	0	8.7	--	--	--
Juan	Triticale	37	8	11.6	46.9	14.0	10.8
Victoria	Triticale	42	2	22.0	46.6	13.8	10.5
Trial average		26	1	14.4	55.1	16.5	9.9
PLSD (5%)		4.8	3	6.3	1.7	1.0	0.4
CV (%)		11	330	27	2	4	3
P-VALUE		0.00	0.00	0.00	0.00	0.00	0.00

-- = samples were too small to allow quality testing.

Yields adjusted to 10 percent moisture, proteins to 12 percent moisture.

No shattering observed.

Russian wheat aphid infestation was severe.

Table 20. 1994 state-wide variety testing program spring grain trial on the Pendleton Experiment Station, Pendleton, OR

Variety/ line	Market class	Julian heading date	Plant height (in)	Yield (bu/a)	Test weight (lb/bu)	Protein percent	Moisture percent
Calorwa	Club	147	30	42.9	61.5	10.3	8.7
Westbred 926R	HR	147	30	65.3	62.9	11.4	9.2
Yecora Rojo	HR	148	25	38.4	62.9	11.1	9.1
ID377S	HW	151	32	50.0	61.4	10.4	9.5
Klasic	HW	148	23	45.8	61.9	12.0	9.1
Alpowa	SW	151	30	46.5	60.8	9.0	8.4
Centennial	SW	147	30	39.3	61.1	10.2	8.7
Dirkwin	SW	152	30	18.8	56.0	11.3	10.0
ID392	SW	151	31	32.3	59.0	10.5	8.7
Owens	SW	150	42	35.0	58.4	11.0	8.9
Penawawa	SW	150	30	32.7	58.7	11.2	9.1
Treasure	SW	151	32	37.3	59.1	9.9	8.7
Wakanz	SW	149	35	69.1	59.7	9.9	8.7
Wawawai	SW	150	40	63.1	63.1	9.3	9.2
Juan	Triticale	151	44	42.1	50.0	9.8	9.8
RC12700	Triticale	153	52	60.3	52.2	9.5	9.6
Victoria	Triticale	149	45	52.0	51.3	9.4	9.8
Trial average		150	34	43.0	59.0	10.6	9.1
PLSD (5%)		--	7	9.3	0.9	0.9	0.6
CV (%)		--	19	13	1	5	4
P-VALUE		--	0.00	0.00	0.00	0.00	0.00

No lodging or shattering was observed.

Yields adjusted to 60 lb bushels and 10 percent moisture.

Proteins adjusted to 12 percent moisture.

Table 21. 1994 state-wide variety testing program spring barley trial on the Hermiston Research and Extension Center, Hermiston, OR

Variety	Market class	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)	1000 Seed Weight (g)
Baronesse	2RF	42	6994	55.2	50.9
Colter	6RF	44	6777	55.1	44.7
Columbia	6RF	38	6458	51.5	44.7
Crest	2RM	44	6499	54.8	54.6
Crystal	2RM	44	5202	54.8	55.5
Maranna	6RF	36	7361	54.0	43.9
Russell	6RM	43	6198	55.8	56.2
SDM306	6RF	36	6775	53.5	44.9
Steptoe	6RF	40	5270	53.0	51.5
Trial average		41	6393	54.2	49.7
PLSD (5%)		4	1351	1.4	NS
CV (%)		5	12	2	22
P-VALUE		0.00	0.04	0.00	0.69

Limited lodging and no shattering were observed.

Yields have not been moisture adjusted.

Table 22. 1994 state-wide variety testing program spring barley trial on the John Cuthbert Ranch, LaGrande, OR

Name	Market class	Plant height (in)	Lodging percent	Yield (lb/a)	Test weight (lb/bu)
Baroness	2RF	33	37	3786	49.4
Colter	6RF	38	50	3717	47.5
Crest	2RM	35	35	4150	48.6
Crystal	2RM	36	7	3575	49.7
Maranna	6RF	31	27	3547	43.9
Russell	6RM	34	23	3629	49.3
Steptoe	6RF	36	57	3232	45.3
Sunstar	6RF	38	43	4017	49.4
Trial average		35	35	3707	47.9
PLSD (5%)		NS	NS	NS	2.5
CV (%)		10	96	13	3
P-VALUE		0.20	0.68	0.46	0.00

No shattering was observed.

Yields have not been moisture adjusted.

Table 23. 1994 state-wide variety testing program spring barley trial on the Sherman Experiment Station, Moro, OR

Variety	Market class	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)
Baroness	2RF	23	3025	52.1
Colter	6RF	26	3074	49.6
Crest	2RM	23	2783	50.2
Crystal	2RM	25	2815	52.2
Maranna	6RF	22	3136	49.6
Russell	6RM	27	2822	51.3
Steptoe	6RF	24	3301	50.2
Sunstar	6RF	26	3121	50.6
Trial average		25	3010	50.7
PLSD (5%)		2	NS	NS
CV (%)		5	10	2
P-VALUE		0.00	0.44	0.13

No lodging or shattering observed.

Table 24. 1994 state-wide variety testing program spring barley trial on the Charlie Anderson Ranch, Heppner, OR

Variety	Market class	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)
Baroness	2RF	34	2937	53.3
Colter	6RF	31	1585	49.5
Crest	2RM	35	2290	52.8
Crystal	2RM	29	1462	51.2
Maranna	6RF	25	1527	48.9
Russell	6RM	38	1479	51.2
Steptoe	6RF	35	3210	49.6
Sunstar	6RF	34	2500	50.0
Trial average		33	2124	50.8
PLSD (5%)		NS	565	2.0
CV (%)		16	15	2
P-VALUE		0.14	0.00	0.00

No lodging or shattering observed.

Table 25. 1994 state-wide variety testing program spring barley trial on the Pendleton Experiment Station, Pendleton, OR

Variety	Market class	Plant height (in)	Yield (lb/a)	Test weight (lb/bu)
Baronesse	2RF	38	5423	54.8
Colter	6RF	39	4888	53.1
Crest	2RM	37	4693	55.6
Crystal	2RM	39	5190	55.3
Maranna	6RF	31	5279	53.8
Russell	2RM	38	4452	54.9
Steptoe	6RF	39	4894	52.0
Sunstar	6RF	40	4730	53.4
Trial average		38	4944	54.1
PLSD (5%)		3	461	1.2
CV (%)		5	17	1
P-VALUE		0.00	0.01	0.00

Neither lodging nor shattering was observed.

Table 26. 1994 drill strip winter wheat variety tests at fourteen sites across Oregon and southeast Washington

Variety	Rudden klau Amity	Barnes Salem	Guthrie Prinevi	Bernards McMinn	Klages Joseph	Hales Pendl	Hill Pendl	Miller Dufur	Johnson Dalles	Rietmann Condon	Nichols Dayton	Weimer Arltng	M&m Ranch Wasco	Bird Grs Vly	Average over 11 sites
							Yield - bu/a								
Dur.Pride						80	62				47				
Gene	160	142	113	118	120	72	75	82	65	48	59	58	30		88
MacVicar	154	157	141	133	119	86	78	49	45	58	57	48	20	33	88
Madsen	149	105	126	123	114	77	70	70	50	55	58	53	51	31	86
Malcolm	147														
Rod	141	138	153	133	125	89	82	69	91	57	45	65	28	37	95
Rohde	131	117	131	115	116	82	70	65	55	51	54	31	46	36	82
Stephens	149		121	121	109	83	78	79	61	57	50	50			87
Crew/Hyak								71							
Average	147	132	131	124	117	81	76	69	61	54	54	51	35	34	88
													PLSD (10%)		7
							Test weight - lb/bu								
D. Pride						61.6	62.5				57.5				
Gene	57.4	57.9	56.6	60.1	56.2	58.6	60.5	58.9	60.5	58.8	55.0	60.5	58.0		58.5
MacVicar	58.2	60.7	58.8	61.6	55.4	62.0	62.5	60.0	60.7	60.2	56.0	61.8	57.1	61.7	59.8
Madsen	61.1	60.0	58.3	61.6	57.9	60.6	61.2	59.4	60.7	59.3	58.0	60.2	58.8	57.8	59.8
Malcolm	58.9														
Rod	58.0	60.1	59.2	60.8	57.1	61.9	60.9	58.8	59.2	58.1	56.0	59.5	56.6	58.5	59.0
Rohde	61.4	61.7	61.1	62.5	59.5	61.9	62.8	60.4	61.5	58.6	60.0	61.2	60.7	60.2	61.0
Stephens	59.1	59.2	58.6	60.7	57.7	60.3	61.8	59.5	61.2	59.6	55.0	61.3	56.5		59.5
Crew/Hyak								57.7							
Average	59.2	59.9	58.8	61.2	57.3	61.0	61.7	59.2	60.6	59.1	56.8	60.7	58.0	59.6	59.6
													PLSD (10%)		0.7
							Protein percent								
D. Pride						--	11.2								
Gene	--	9.5	11.9	10.0	11.2	--	10.2	7.3	10.7	7.8	--	7.3	10.4	8.2	8.0
MacVicar	--	9.7	10.4	9.3	9.2	--	9.7	7.7	8.8	7.8	--	6.8	11.5	7.5	7.6
Madsen	--	9.8	11.3	10.1	10.4	--	10.5	8.4	10.2	7.2	--	6.5	10.5	8.1	7.9
Malcolm	--														
Rod	--	9.1	10.1	9.1	9.4	--	9.0	7.3	8.6	6.9	--	6.2	9.3	7.2	7.1
Rohde	--	10.0	11.0	9.2	9.8	--	9.9	7.7	8.3	6.2	--	6.3	9.7	7.2	7.3
Stephens	--	8.4	11.2	9.3	10.3	--	9.7	8.7	10.3	7.1	--	7.3	9.6	8.1	7.7
Crew/Hyak								7.3							
Average		9.4	11.0	9.5	10.1		10.0	7.8	9.5	7.2		6.7	10.2	7.7	7.6

Due to field or harvest problems, some yield data were lost. We thank Anderson Seeds of Ione and Pendleton Grain Growers for supplying seed for these trials. These trials were coordinated by Russ Karow, OSU Extension Agronomist, and supported by the STEEPII on-farm testing program.